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NCBC GULFPORT
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LETTER REPORT REGARDING FIELD REPORT, INSTALLATION OF A SEDIMENT RECOVERY TRAP NEAR OUTFALL 3 NCBC GULFPORT MS

12/20/1996

ABB ENVIRONMENTAL

December 20, 1996

Mr. Art Conrad
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, SC 29419-9010

18.2.0.2

Dear Mr. Conrad:

SUBJECT: **Field Report, Installation of a Sediment Recovery Trap Near Outfall 3, Naval Construction Battalion Center (NCBC) Gulfport, Mississippi; Contract No. N62467-89-D-0317/132**

INTRODUCTION

ABB Environmental Services Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command to install a sediment recovery trap (SRT) to control the runoff of potentially contaminated sediment and soils at the NCBC Gulfport, Mississippi. The original SRTs were designed for a pilot-scale test to determine if the transportation of contaminated sediment could be reduced through the installation of permeable check dams. These pilot-scale SRTs were installed in April 1995 and had an expected service life of 1 to 2 years. The new configuration of the SRTs should provide for longer service life while still limiting/reducing the movement of contaminated sediment through the ditch. The installed SRT has been configured to withstand damage caused by erosion by placing the rock in gabion cages. The SRT is located on the western end of the NCBC Gulfport, just north of Outfall 3 (Attachment A, Figure 1). The installed SRT will be monitored for performance and damage, and information gathered will be used to design future SRTs.

FIELD ACTIVITIES

During the week of November 15, 1996, ABB-ES constructed an SRT on the NCBC in Gulfport, Mississippi, near Outfall 3 on the western edge of the base. Figure 2 contains an as-built sketch of the new SRT. Attachment B contains photographs of the new SRT under construction. The newly installed SRT replaces the pre-existing #3 SRT. The new SRT consists of metal cages (gabions) connected together with tie wires and filled with 3- to 12-inch diameter limestone. A foundation of approximately 3 inches of #57 gravel underneath a layer of geotextile felt was laid down below the new SRT for stability. An approximate 12-inch layer of large rocks was placed upstream and downstream of the SRT to control erosion.

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The new SRT took approximately 3 days to construct, including the demolition of the old SRT, dewatering of the channel, and clean-up activities. Installation equipment included an excavator, a dump truck, and a front-end loader along with operators. ABB-ES personnel provided technical assistance to the SeaBees where necessary. Prior to installation of the SRT, the channel was dewatered by placing temporary sheet piling both upstream and downstream of excavation. Due to leakage through the sheet piling, a pump was used to dewater the area of excavation prior to and during construction activities. Approximately 40 cubic yards of sediment was removed from the channel and moved to the sediment dewatering area on Site 8. The soil encountered during excavation was a gray, fine sand with some silt. The sediment ranged from a medium sand to a silt with little fine sand. Typically, the sediment contained a high percentage of fine organic material.

Water passing through the SRT is both slowed down and filtered by a layer of geotextile felt placed between two gabions and transverse to the flow of surface water. Sediment migration is limited by the SRT as sediment in the bedload either settles out in the low energy pool upstream of the SRT or is contained by the filtering action of the SRT.

RECOMMENDATIONS

The installed SRT has been designed to withstand rapidly moving surface water in the ditch. The SRT should be monitored for performance and damage. Any deficiencies in performance or damage caused by erosion should be taken into account on future SRT designs. Sediment migration performance will be monitored as part of the Interim Corrective Measures Workplan (ABB-ES, 1996).

If you have any questions or comments, or require any additional information please do not hesitate to contact us.

Sincerely,

ABB ENVIRONMENTAL SERVICES

Eric J. Ironside	Robert Fisher	Penny Baxter
Engineer	Lead Hydrogeologist	Task Order Manager

pc: Gordon Crane, NCBC Gulfport

Attachments

ATTACHMENT A

FIGURES

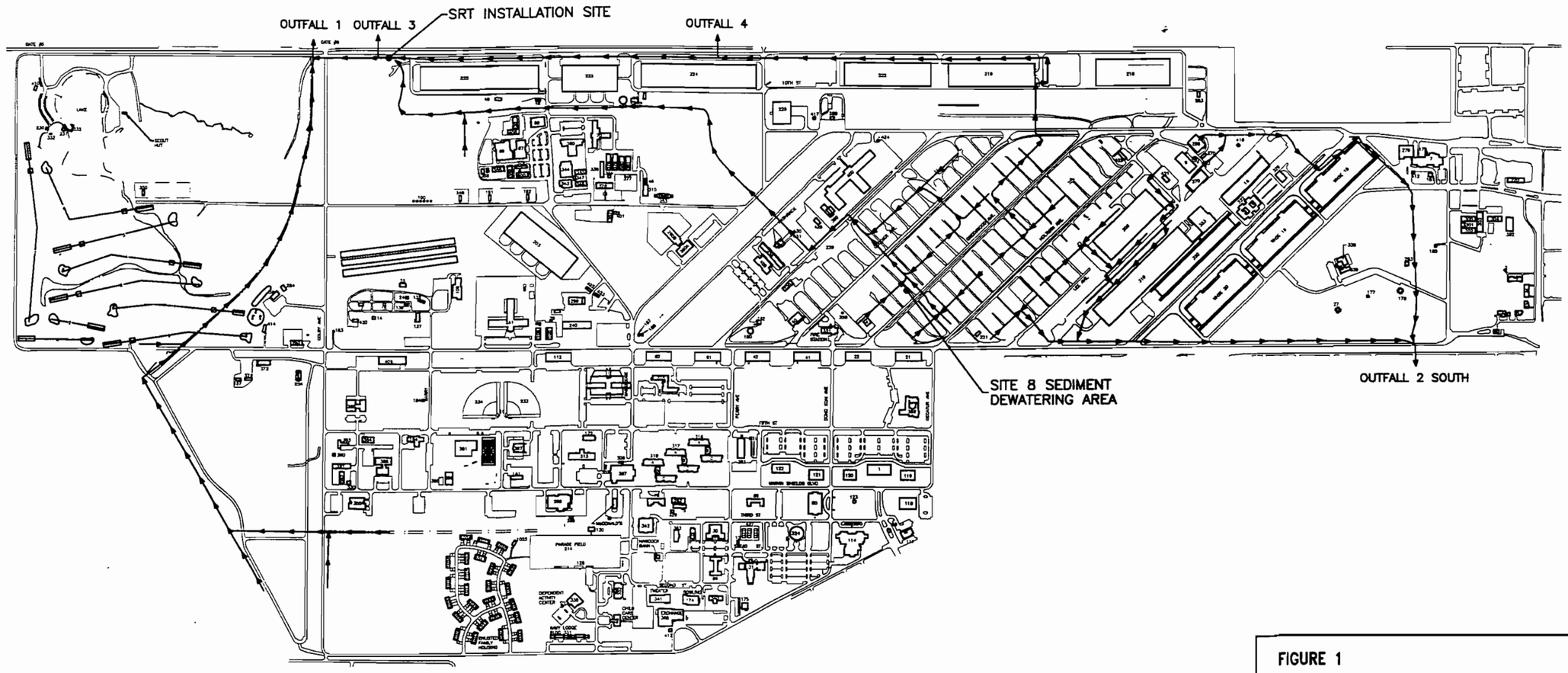


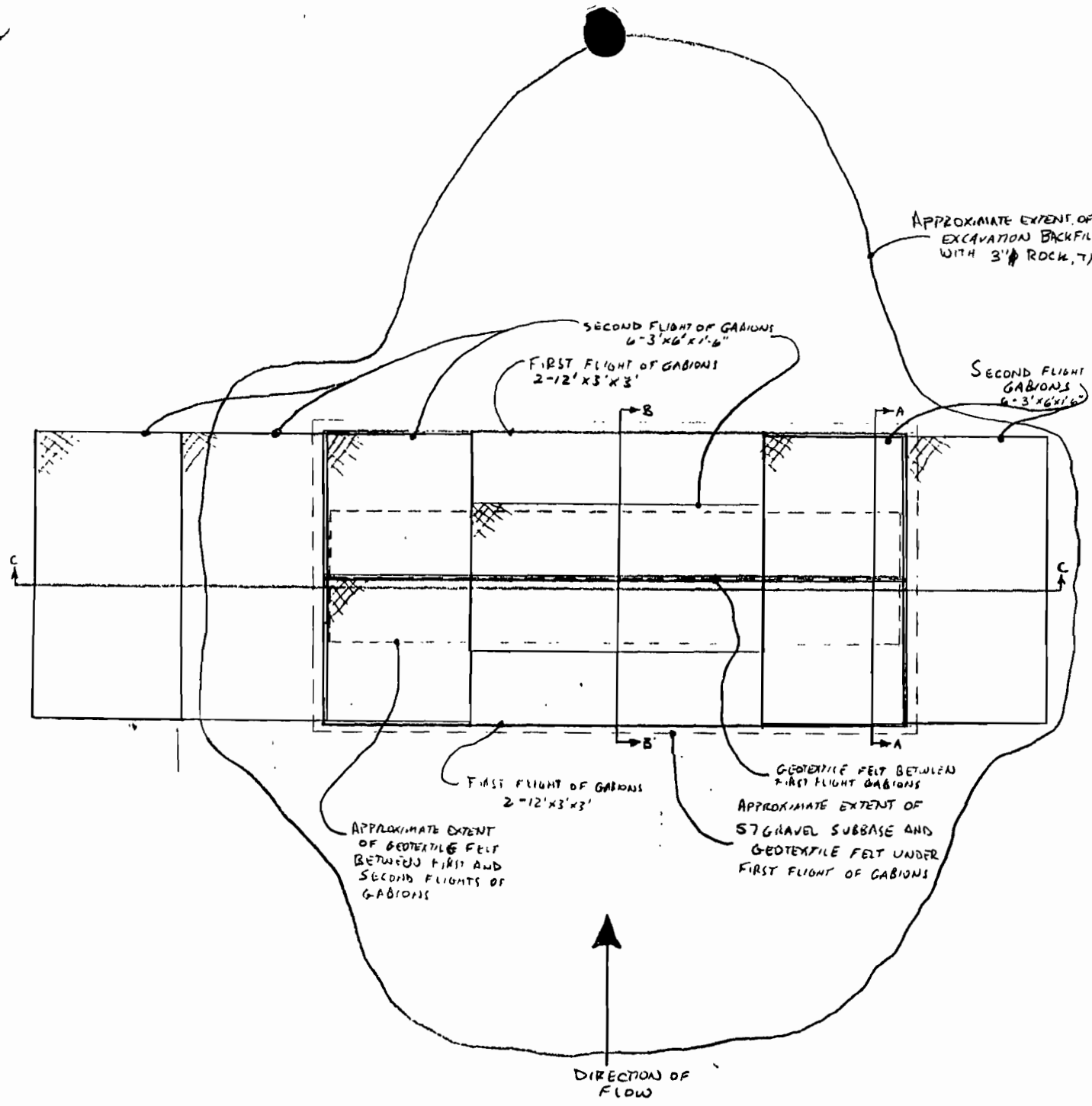
FIGURE 1

LOCATION OF SRT #3 INSTALLATION SITE

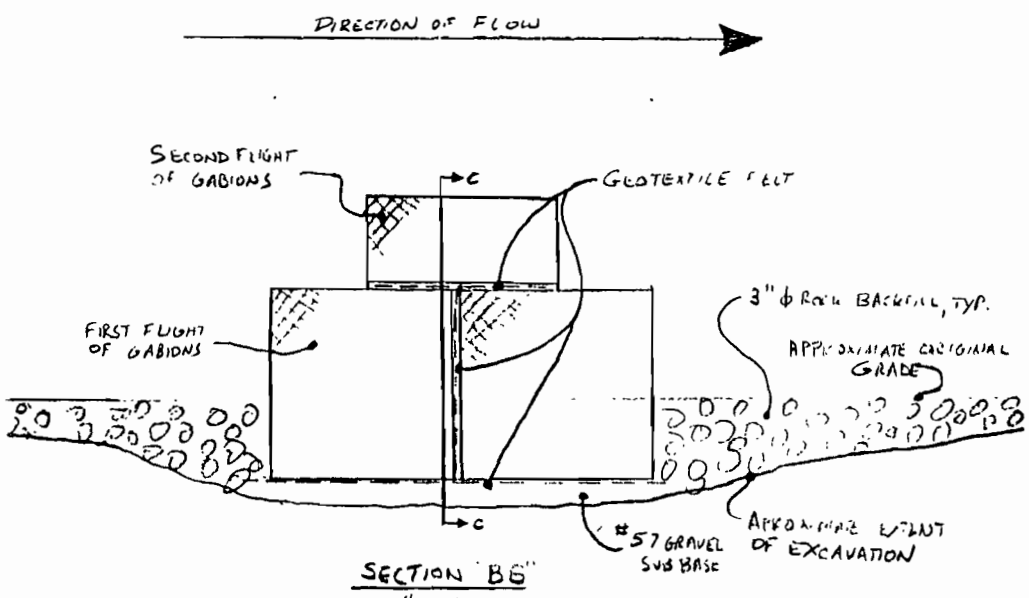
FIELD REPORT, INSTALLATION OF A SEDIMENT RECOVERY TRAP

NAVAL CONSTRUCTION BATTALION CENTER
GULFPORT, MISSISSIPPI

D:\DWG\ABB\08505-16\FLD_RPT\FIG_1\DMF\961209

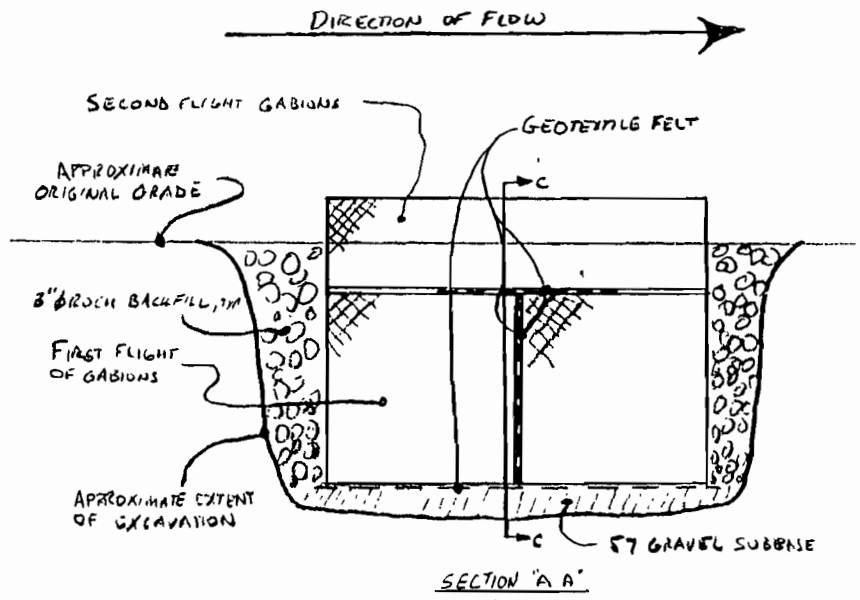


OVERVIEW
1" = 3'



SECTION "BB"
1" = 3'

ALL GABIONS FILLED WITH 3"ϕ ROCK



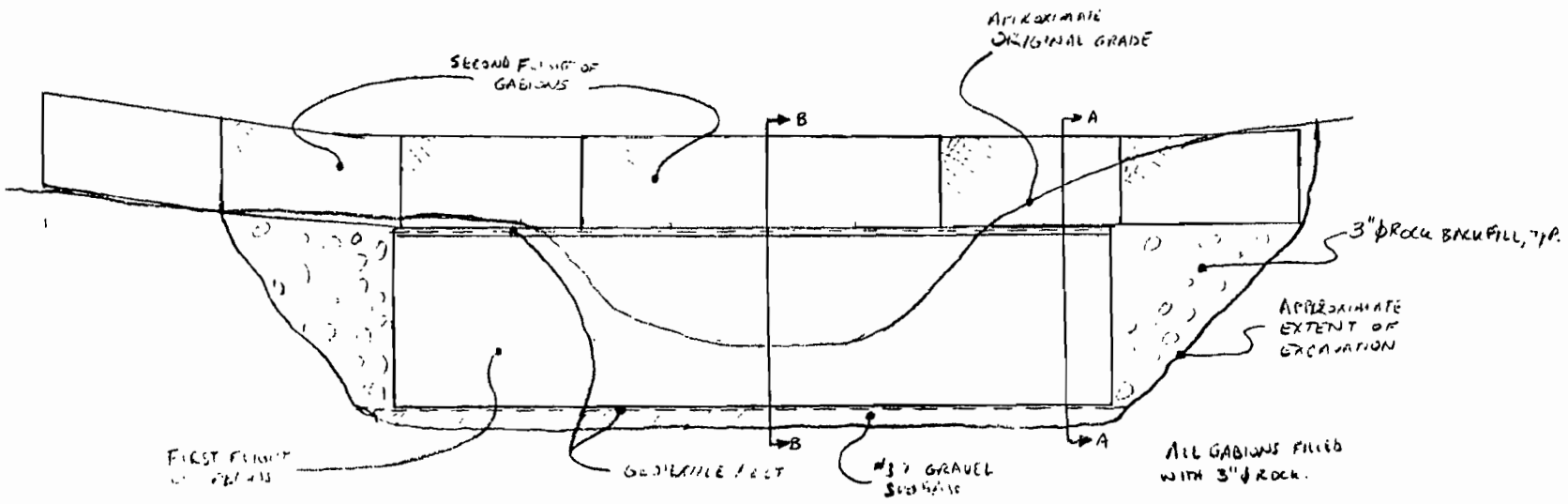
SECTION "A A"
1" = 3'

ALL GABIONS FILLED WITH 3"ϕ ROCK

FIGURE NO.: 2
DRAWN BY: EJI
DATE: 12/1/96
CHECKED BY: BF

FIELD REPORT, INSTALLATION OF A SEDIMENT RECOVERY TRAP
NAVAL CONSTRUCTION BATALLION CENTER
GULFPORT, MISSISSIPPI
PILOT SRT DESIGN (AS-BUILT)

WATER FLOW DIRECTION IS INTO PAGE



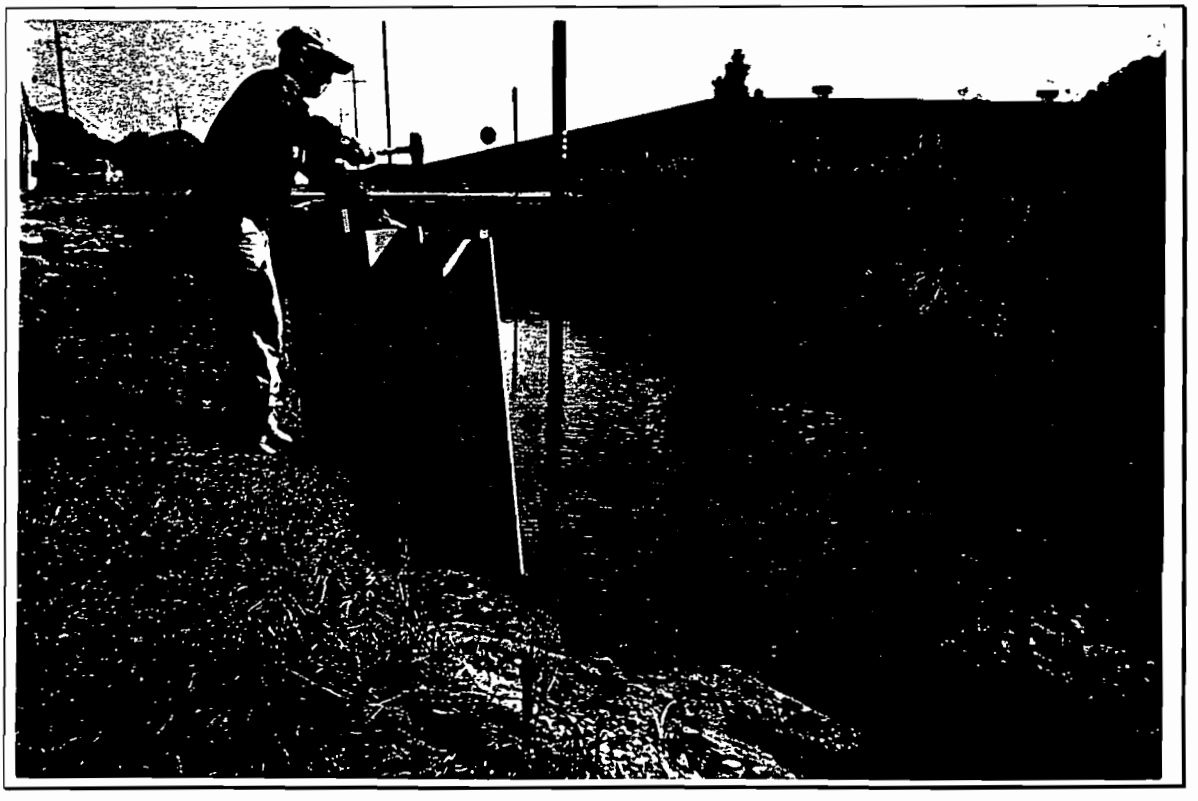
SECTION "CC"
1" = 3'

ATTACHMENT B

PHOTOGRAPHS

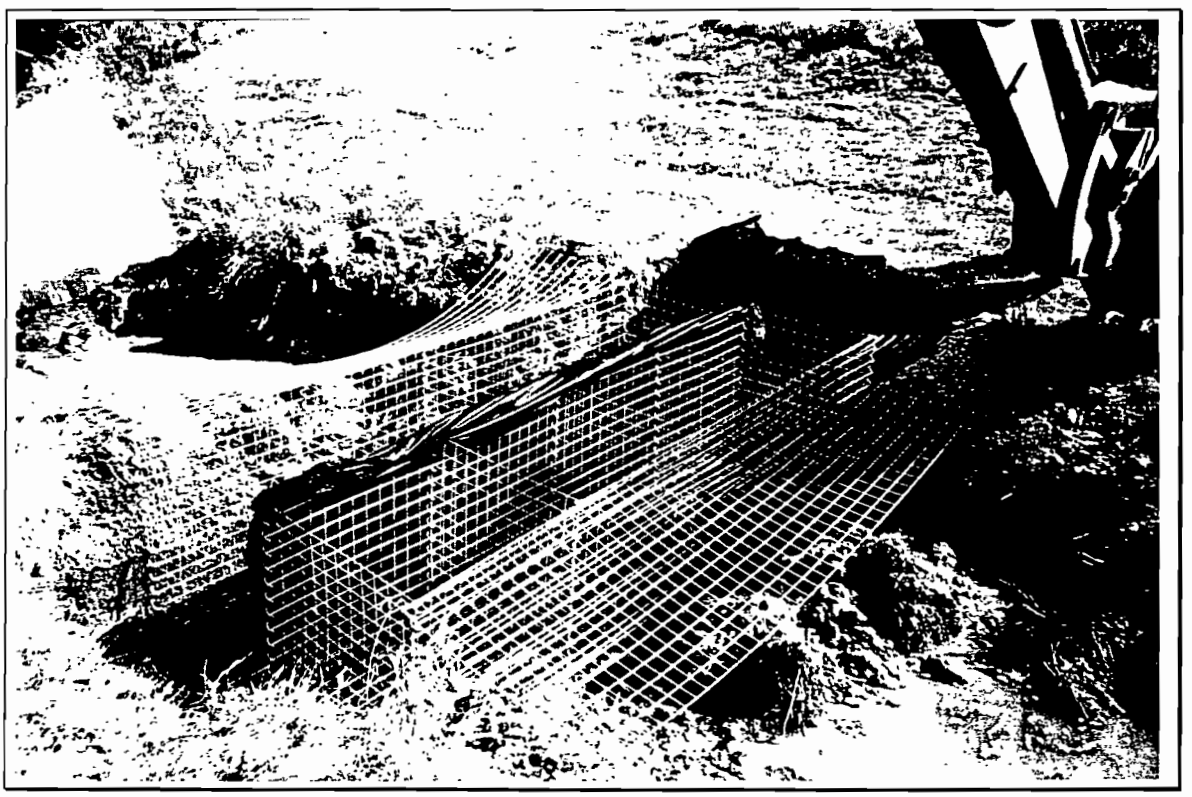
ATTACHMENT B

PHOTOGRAPHS



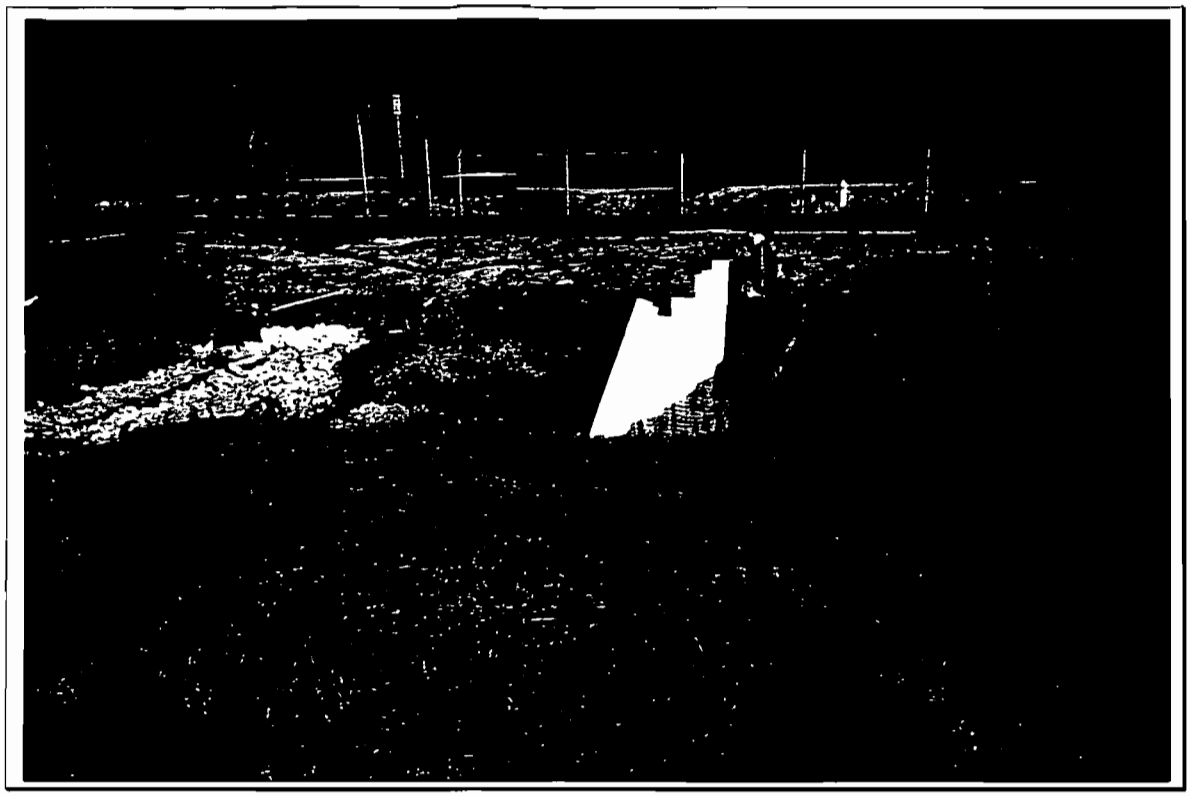
1. Preparing SRT installation by cutting off streamflow with PVC sheet piling.

2. Excavating "old" SRT and preparing site for gabion installation. Note #57 gravel in bottom of trench to help stabilize foundation for gabions.

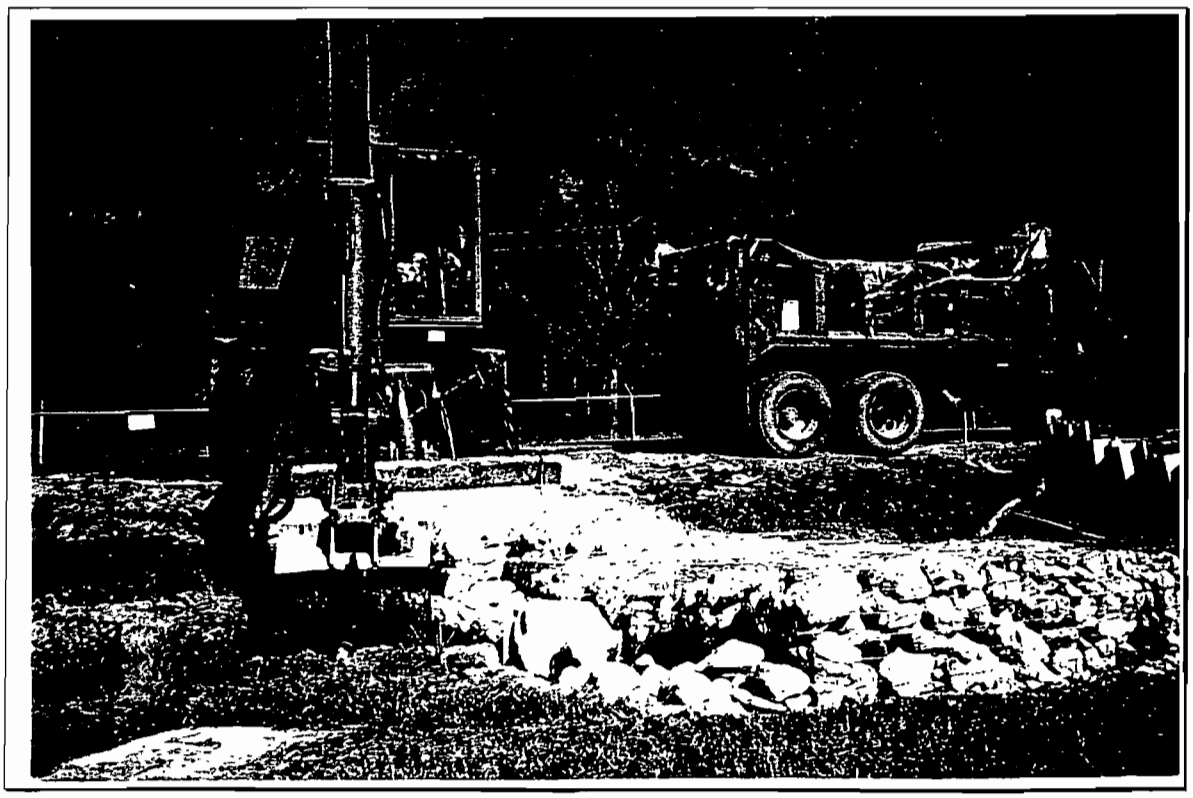


3. Gabion cages installed in prepared trench.

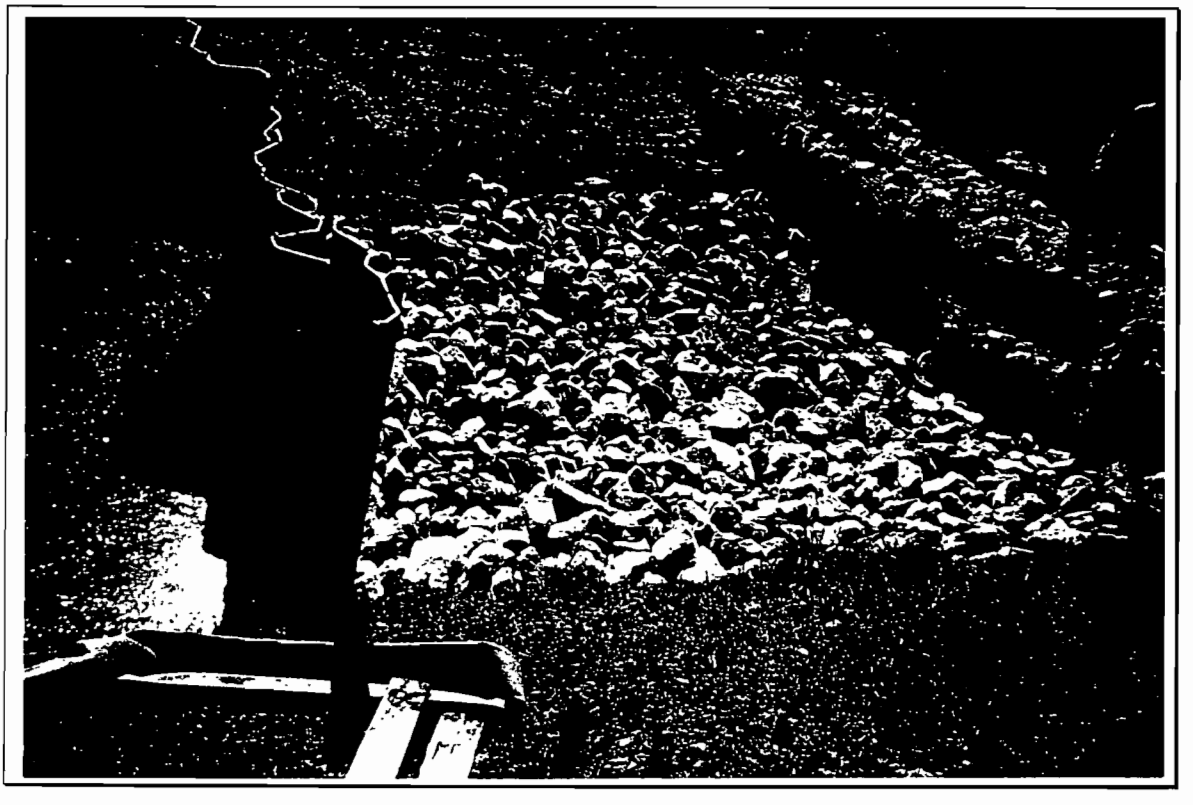
4 4- to 6-inch rock (limestone) placed in gabion chages.



5. Installing first level of gabions in SRT. Dewatering system still operating. (Note 4 inches of water backuped up against the sheet piling.)



6. SRT completed. Preparing to install rip-rap in upstream and downstream locations to protect against erosion.



7. Complete SRT with erosion control rip-rap installed. Picture taken just prior to removal of the sheet piling.

ATTACHMENT C

GLOSSARY

GLOSSARY

ABB-ES	ABB Environmental Services Inc.
NCBC	Construction Battalion Center
SRT	sediment recovery trap